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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,971	09/13/2001	Yasunaga Hamada	381NT/49740	3553
23911	7590	01/22/2004	EXAMINER	
CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300			KEASEL, ERIC S	
			ART UNIT	PAPER NUMBER
			3754	

DATE MAILED: 01/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/763,971	HAMADA ET AL. <i>[Handwritten signature]</i>
Examiner	Art Unit	
Eric Keasel	3754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 21 November 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 16-22 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 16-21 is/are rejected.
- 7) Claim(s) 22 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| <input type="checkbox"/> Notice of References Cited (PTO-892) | <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a **single paragraph** on a separate sheet within the range of 50 to 150 words. It is important that the abstract **not exceed 150 words in length** since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because it exceeds 150 words and is two paragraphs. Correction is required. See MPEP § 608.01(b).

Claim Objections

3. Claim 22 is objected to because in line 3, it appears that "provide" should be --provided--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakado et al. (US Patent Number 5,992,391) in view of Suzuki et al. (US Patent Number 6,130,279).

Yamakado et al. disclose an electromagnetic fuel injector that injects directly into the cylinder of the internal combustion engine (see Fig. 20). Battery (2) voltage is provided to multiple coils (11 and 12) to produce the opening and holding currents (see Fig. 4). A yoke (14) surrounds the coils, which surround the stationary core (13). An air gap is shown between the outside surface of the coils and an inside surface of the yoke. Yamakado et al. are silent as to the material selection of the bobbin. Suzuki et al. disclose using PPS and glass fiber resin with 55-85% alumina filler to produce a resin molding material with a heat conductivity of at least 1.5 W/mK. Suzuki et al. disclose one of the intended uses of this material as being for automotive parts. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the PPS and glass fiber resin with 55-85% alumina filler of Suzuki et al. as the material choice for the bobbin of Yamakado et al. in order to have a molded article with good thermal conductivity as taught by Suzuki et al. Re 30-80 % and 1.0-3.0 W/mK, it would have been obvious to one having ordinary skill in the art at the time the invention was made to

have selected the ranges set forth in claims 4 and 6, since such ranges overlap the ranges set forth in the prior art (see MPEP 2144.05).

6. Claims 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakado et al. (DE 198 28 672 A1) in view of Suzuki et al. (WO98/16585).

Yamakado et al. disclose an electromagnetic fuel injector that injects directly into the cylinder of the internal combustion engine (see Fig. 20). Battery (2) voltage is provided to multiple coils (11 and 12) to produce the opening and holding currents (see Fig. 4). A yoke (14) surrounds the coils, which surround the stationary core (13). An air gap is shown between the outside surface of the coils and an inside surface of the yoke. Yamakado et al. are silent as to the material selection of the bobbin. Suzuki et al. disclose using PPS and glass fiber resin with 55-85% alumina filler to produce a resin molding material with a heat conductivity of at least 1.5 W/mK. Suzuki et al. disclose one of the intended uses of this material as being for automotive parts. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the PPS and glass fiber resin with 55-85% alumina filler of Suzuki et al. as the material choice for the bobbin of Yamakado et al. in order to have a molded article with good thermal conductivity as taught by Suzuki et al. Re 30-80 % and 1.0-3.0 W/mK, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the ranges set forth in claims 4 and 6, since such ranges overlap the ranges set forth in the prior art (see MPEP 2144.05).

Allowable Subject Matter

7. Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

Regarding Suzuki not disclosing a direct injection fuel injector with two coils, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Keasel whose telephone number is (703) 308-6260. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on (703) 308-2696. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.

ER 19 Jan
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19 Jan 2004


Gene Mancene
Supervisory Patent Examiner
Group 3700